IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Applicants: Weixiao Liu   Examiner: Russell, Wanda Z.

Serial No: 10/560,480   Group Art Unit: 2416

Filed: December 12, 2005   Docket: PU030168

For: METHOD AND APPARATUS FOR PROCESSING NULL PACKETS IN A DIGITAL MEDIA RECEIVER

Mail Stop Appeal Brief-Patents
Hon. Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

APPEAL BRIEF

Applicants appeal the status of Claims 1-3 and 11-37 as rejected in the non-final Office

Action dated October 3, 2008 and the final Office Action dated January 13, 2009, pursuant to the

Notice of Appeal filed concurrently herewith and submit this appeal brief

TABLE OF CONTENTS:

To U.S. Patent No. 6,810,084 to Jun et al. in view of U.S. Patent Publication No.

2003/0115345 to Chien et al. and U.S. Patent No. 6,788,654 to Hashimoto et al.

1.   **Real Party in Interest**

The real party in interest is THOMSON LICENSING S.A., the assignee of the entire right

title and interest in and to the subject application by virtue of an assignment recorded with the

Patent Office on December 12, 2005 at reel/frame 17361/0182.

2.   <u>Related Appeals and Interferences</u>

None

3.   <u>Status of Claims</u>

Claims 1-37 are pending. Claims 1-3 and 11-37 stand rejected and are under appeal.

A copy of the Claims 1-37 is presented in Section 8 below.

4.   **Status of Amendments**

An Amendment under 37 CFR §1.111, filed with the PTO on November 4, 2008 in

response to a non-final Office Action dated October 3, 2008, was entered. No

Responses/Amendments were filed subsequent to the above Amendment filed on November 4,

2008. A final Office Action dated January 13, 2009, to which this Appeal Brief is directed, is

currently pending.

5.   <u>Summary of Claimed Subject Matter</u>

Independent Claim 1 is directed to "[a]n apparatus" (Claim 1, preamble).

The subject matter of the first element (beginning with "a null packet detector") recited in

Claim 1 is described, e.g., at: page 8, lines 5-20. Moreover, the subject matter of the first

element of Claim 1 involves, e.g.: element 250 of FIG. 2.

The subject matter of the second element (beginning with "wherein") recited in Claim 1

is described, e.g., at: page 8, lines 21 to page 9, line 9. Moreover, the subject matter of the

second element of Claim 1 involves, e.g.: element 250 of FIG. 2.

Independent Claim 13 is directed to "[a]n apparatus" (Claim 13, preamble).

The subject matter of the first element (beginning with "a Syndrome detector") recited in

Claim 13 is described, e.g., at: page 10, lines 1-6. Moreover, the subject matter of the first

element of Claim 13 involves, e.g.: element 210 of FIG. 2.

The subject matter of the second element (beginning with "a null packet detector") recited

in Claim 13 is described, e.g., at: page 8, lines 5-20. Moreover, the subject matter of the second

element of Claim 13 involves, e.g.: element 250 of FIG. 2.

The subject matter of the third element (beginning with "an MPEG Sync-Byte Re-

insertion circuit") recited in Claim 13 is described, e.g., at: page 6, lines 26-32; and page 10, lines

6-9. Moreover, the subject matter of the third element of Claim 13 involves, e.g.: element 240 of

FIG. 2.

Independent Claim 20 is directed to "[a] method" (Claim 20, preamble).

The subject matter of the first element (beginning with "processing a stream") recited in

Claim 20 is described, e.g., at: page 11, lines 1-9. Moreover, the subject matter of the first

element of Claim 20 involves, e.g.: element S1 of FIG. 3.

The subject matter of the second element (beginning with "performing a first detection") recited in Claim 20 is described, e.g., at: page 11, lines 10-15. Moreover, the subject matter of the second element of Claim 20 involves, e.g.: element S2 of FIG. 3.

The subject matter of the third element (beginning with "performing a second detection") recited in Claim 20 is described, e.g., at: page 8, lines 25-27; and page 11, lines 19-20. Moreover, the subject matter of the third element of Claim 20 involves, e.g.: element S3 of FIG. 3.

The subject matter of the fourth element (beginning with "if the first fixed bit pattern") recited in Claim 20 is described, e.g., at: page 11, lines 20-21. Moreover, the subject matter of the fourth element of Claim 20 involves, e.g.: element S4A of FIG. 3.

The subject matter of the fifth element (beginning with "inserting") recited in Claim 20 is described, e.g., at: page 11, lines 24-27. Moreover, the subject matter of the fifth element of Claim 20 involves, e.g.: element S5 of FIG. 3.

Independent Claim 34 is directed to "[a] method" (Claim 34, preamble).

The subject matter of the first element (beginning with "processing a stream") recited in Claim 34 is described, e.g., at: page 3, lines 4-15; and page 11, lines 1-9. Moreover, the subject matter of the first element of Claim 34 involves, e.g.: element S1 of FIG. 3.

The subject matter of the second element (beginning with "decoding") recited in Claim 34 is described, e.g., at: page 11, lines 10-15. Moreover, the subject matter of the second element of Claim 34 involves, e.g.: element S2 of FIG. 3.

The subject matter of the third element (beginning with "if a checksum-encoded sync byte

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candidate") recited in Claim 34 is described, e.g., at: page 12, lines 13-15. Moreover, the subject

matter of the third element of Claim 34 involves, e.g.: element B2 of FIG. 4.

Independent Claim 35 is directed to "[a]n apparatus" (Claim 35, preamble).

The subject matter of the first element (beginning with "means for processing a stream")

recited in Claim 35 is described, e.g., at: page 3, lines 4-15; page 8, lines 8-9; and page 11, lines

1-9. Moreover, the subject matter of the first element of Claim 35 involves, e.g.: element 250 of

FIG. 2.

The subject matter of the second element (beginning with "means for decoding") recited

in Claim 35 is described, e.g., at: page 11, lines 10-15. Moreover, the subject matter of the

second element of Claim 35 involves, e.g.: element 220 of FIG. 2.

The subject matter of the third element (beginning with "means for searching") recited in

Claim 35 is described, e.g., at: page 8, lines 21-27. Moreover, the subject matter of the third

element of Claim 35 involves, e.g.: element 250 of FIG. 2.

6.   **Grounds of Rejection to be Reviewed on Appeal**

Claims 1-3 stand rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No.

6,810,084 to Jun et al. (hereinafter "Jun"). Claims 11-12 stand rejected under 35 U.S.C. 103(a) as

being unpatentable over Jun in view of U.S. Patent No. 6,788,654 to Hashimoto et al. (hereinafter

"Hashimoto"). Claims 13-37 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Jun

in view of U.S. Patent Publication No. 2003/0115345 to Chien et al. (hereinafter "Chien"). Claims

20-37 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Jun in view of Chien and

Hashimoto.

The preceding rejections under 35 U.S.C. §102(e) and 35 U.S.C. §103(a) are presented

for review in this Appeal with respect to Claims 1-3 and 11-37, as argued with respect to

independent Claims 1, 13, 20, 34, and 35.

Regarding the grouping of the claims with respect to the rejection under 35 U.S.C.

§102(e), Claims 2-3 stand or fall with Claim 1.

Regarding the grouping of the claims with respect to the rejection under 35 U.S.C.

§103(a) of Claims 11-12, Claims 11-12 stand or fall together (due to their common dependency

from Claim 1).

Regarding the grouping of the claims with respect to the rejection under 35 U.S.C.

§103(a) of Claims 13-37, Claims 14-19 stand or fall with Claim 13 due to their respective

dependencies, Claims 21-33 and 36-37 stand or fall with Claim 20 due to their respective

dependencies, and Claims 34 and 35 stand alone.

Regarding the grouping of the claims with respect to the rejection under 35 U.S.C.

§103(a) of Claims 20-37, Claims 21-33 and 36-37 stand or fall with Claim 20 due to their

respective dependencies, and Claims 34 and 35 stand alone.

It is to be noted that Claim 1 was objected to in the above mentioned final office action

due to a trivial matter. It is to be further noted that the Applicant does not contest the Examiner's

objection of Claim 1 in this Appeal. Hence, once a decision on the Appeal has been reached, the

Applicant is willing to correct Claim 1 in accordance with any of the Examiner's two suggestions

regarding overcoming the objection of Claim 1.

7.   <u>Argument</u>

A.   **Introduction**

In general, the present invention is directed to a method and apparatus for processing null

packets in a digital media receiver (Applicant's Specification, Title). As disclosed in the

Applicant's specification at page 6, lines 7-12:

> The synchronization de-coupling feature of MPEG-2 was intended to
> introduce the flexibility, for example, to enable the system to carry Asynchronous
> Transfer Mode (ATM) packets easily without interfering with ATM
> synchronization. However, an unintended consequence of this feature is the
> increased probability of "false locks" in the syndrome detector of the prior art
> within the MPEG framing block in FIG. 1.

Moreover, as disclosed in the Applicant's specification at page 7, lines 3-7:

> In broadcasting, the data stream may contain repetitive null packets, which
> may cause the Syndrome Detector 220 within the MPEG framing block of the
> prior art to lock to the wrong (synchronization) byte position, thereby producing
> invalid MPEG-2 packets output to the transport block even when the FEC is
> perfectly locked and delivers an error free data stream.

The claims of the pending invention include novel features not shown in the cited

references and that have already been pointed out to the Examiner. These features provide

advantages over the prior art and dispense with prior art problems such as those described above

with reference to the Applicant's specification.

It is respectfully asserted that independent Claims 1, 13, 20, 34, and 35 are each

patentably distinct and non-obvious over the cited references in their own right. For example, the

below-identified limitations of independent Claims 1, 13, 20, 34, and 35 are not shown in any of

the cited references, either taken singly or in any combination. Moreover, these Claims are

distinct from each other in that they are directed to different implementations and/or include

different limitations. For example, while each of Claims 1, 13, and 35 are respectively directed

to an apparatus, each of these claims includes different limitations with respect to each other.

Moreover, while each of Claims 20 and 34 are respectively directed to a method, each of these

claims includes different limitations with respect to each other. Accordingly, each of

independent Claims 1, 13, 20, 34, and 35 represent separate features/implementations of the

invention that are separately novel and non-obvious with respect to the prior art and to the other

claims. As such, independent Claims 1, 13, 20, 34, and 35 are separately patentable and are each

presented for review in this appeal.

B.   Whether Claims 1-3 are Anticipated Under 35 U.S.C. §102(e) With Respect To U.S.

Patent No. 6,810,084 to Jun et al.

"A claim is anticipated only if each and every element as set forth in the claim is found,

either expressly or inherently described, in a single prior art reference." MPEP §2131, citing

Verdegaal Bros. v. Union Oil Co. of California, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed.

Cir. 1987).

The Examiner rejected Claims 1-3 as being unpatentable over U.S. Patent No. 6,810,084 to

Jun et al. (hereinafter "Jun"). The Examiner contends that Jun shows all the limitations recited in

Claims 1-3.

Jun is directed to "MPEG data frame and transmit and receive system using same" (Jun,

Title). In further detail, Jun discloses the following in his Abstract:

Disclosed is an MPEG data frame and a transmitting and receiving system

using the MPEG data frame for enhancing receiving performance of receiver

which moves or is stationary. The digital TV broadcasting data frame according to

the preferred embodiment of the present invention comprises a data frame which

includes at least one data field which has 313 data segments. The first data

segment of the data field is a data field sync signal which includes a training data

sequence used for synchronization at the receiver, and the other 312 data segments

each include a 188-byte transport packet and 20-byte error correction data.

Therefore, when null packets are input to the 8 VSB transmitter, 2-level training

sync signals are used as training data for an equalizer at the receiver so as to

increase receiving performance of a receiver that moves or is stationary.

It will be shown herein below that the limitations of Claims 1-3 reproduced herein

are not shown in Jun, and that Claims 1-3 should be allowed.

B1.   Claims 1-3

Initially, it is respectfully pointed out to the Examiner that Claims 2-3 directly or

indirectly depend from independent Claim 1. Thus, Claims 2-3 include all the limitations of

Claim 1.

It is respectfully asserted that that none of the cited references, either taken singly or in

combination, teach or suggest the following limitations of Claims 1-3 (with the following

applicable to Claims 2-3 by virtue of their respective dependencies from Claim 1):

a Null-Packet Detector for processing a stream of fixed-length packets

received by said apparatus as digitally encoded signals and having multiple packet

types, each packet including a header portion and a data portion, the header

portion including a sync byte,

wherein said Null-Packet Detector processes the stream by detecting

whether a received packet is a null-packet and for identifying the location of the

sync-byte of a detected null-packet

Initially, the Examiner is reminded that a 35 U.S.C. 102(e) rejection involves a single

reference and not a combination of references. Thus, the Examiner's citation of paragraph

[0054] of the Chien publication on page 3, line 1 of the Office Action, as well as the Examiner's

citation of the Fu reference on page 3, line 4 of the Office Action, in the rejection of Claims 1-3

under 35 U.S.C. 102(e) is incorrect and misplaced.

The following portions of Jun were cited against the above recited limitations of Claims

1-3: Figure 5; col. 5, lines 40-43; and lines 10-12 of the Abstract of Jun.

It is pointed out that each of Claims 1-3 recite, *inter alia*, processing a stream of fixed-length packets **received by said apparatus** as digitally encoded signals. Hence, each of Claims 1-3 may be inherently considered to correspond to a receiver, in order to receive the stream of fixed-lengths packets for processing in the first place.

In contrast, Figure 5 of Jun is explicitly directed to a <u>transmitter</u> (see, e.g., Jun, col. 4, lines 39-41, and col. 5, lines 1-3). Accordingly, the first element in the transmitter of Figure 5 of Jun includes an encoder. Hence, Figure 5 of Jun does not teach or suggest processing a stream of fixed-length packets received as digitally encoded signals as recited in each of Claims 1-3, since the transmitter of Figure 5 of Jun is itself performing the encoding prior to transmission and hence, is not receiving a stream of fixed-length packets as digitally encoded signals as recited in these claims. Element 115 of FIG. 5 of Jun pointed to by the Examiner as "a receiver of the encoded signals" on page 2 of the Office Action is simply a buffer and not a receiver. Moreover, Claims 1-3 are directed to and explicitly recite "an <u>apparatus</u>" (Claims 1-3, preambles), and Claims 1-3 recite, *inter alia*, "processing a stream of fixed-length packets <u>received by said apparatus</u> as digitally encoded signals". However, the apparatus of Jun that includes the transmitter of FIG. 5 of Jun does not receive digitally encoded signals, but instead encodes signals itself.

Given that Figure 5 of Jun is directed to a transmitter, of course the fact of whether a packet is a null packet and the location of the sync-byte of a detected null-packet is easily and readily known by the transmitter of FIG. 5 of Jun since it is the transmitter side itself that is determining at the onset whether a packet is to be a null packet and where a sync-byte of a null packet is to be located. However, clearly, such determinations are not so readily made at the

receiver side, and the solving of this problem at the receiver side is what the subject matters of

Claims 1-3 are directed to.

Moreover, given that it is the transmitter side itself that makes the determinations of

whether a packet is a null packet and the location of the sync-byte of a detected null-packet, it

cannot be reasonably asserted at all that any determinations relating to the same on the

transmitter side correspond to such determinations of the receiver side. That is, the transmitter

side readily knows this information having determined it in the first place, while it is up to the

receiver side to "**figure out**" what the transmitter side has done as far as setting a particular

packet to a null packet and setting a location of a sync byte in the header portion of that null

packet. For example, column 6, lines 19-21 provide an equation for assigning positions of

training sync signals within null packets, hence showing that such information is initially

determined by, and thus clearly known to, the encoder and the elements comprised therein (such

as, for example, the null packet detector).

Hence, Jun does not teach or suggest the above recited limitations of Claims 1-3.

Accordingly, Claims 1-3 are patentably distinct and non-obvious over Jun for at least the

reasons set forth above. Therefore, withdrawal of the rejection and allowance of Claims 1-3 is

earnestly requested.

C.   **Whether Claims 11-12 are Unpatentable Under 35 U.S.C. §103(a) With Respect To**

        U.S. Patent No. 6,810,084 to Jun et al. in view of U.S. Patent No. 6,788,654 to

        Hashimoto et al.

        "To establish prima facie obviousness of a claimed invention, all the claim limitations

must be taught or suggested by the prior art" (MPEP §2143.03, citing *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974)). "If an independent claim is nonobvious under 35 U.S.C. 103, then any claim depending therefrom is nonobvious" (MPEP §2143.03, citing *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)).

The Examiner rejected Claims 11-12 as being unpatentable over U.S. Patent No. 6,810,084 to Jun et al. (hereinafter "Jun") in view of U.S. Patent No. 6,788,654 to Hashimoto et al. "hereinafter "Hashimoto"). The Examiner contends that the cited combination shows all the limitations recited in Claims 11-12.

Jun is directed to "MPEG data frame and transmit and receive system using same" (Jun, Title). In further detail, Jun discloses the following in his Abstract:

Disclosed is an MPEG data frame and a transmitting and receiving system using the MPEG data frame for enhancing receiving performance of receiver which moves or is stationary. The digital TV broadcasting data frame according to the preferred embodiment of the present invention comprises a data frame which includes at least one data field which has 313 data segments. The first data segment of the data field is a data field sync signal which includes a training data sequence used for synchronization at the receiver, and the other 312 data segments each include a 188-byte transport packet and 20-byte error correction data. Therefore, when null packets are input to the 8 VSB transmitter, 2-level training sync signals are used as training data for an equalizer at the receiver so as to increase receiving performance of a receiver that moves or is stationary.

Hashimoto is directed to a "digital data receiver" (Hashimoto, Title). In further detail, Hashimoto discloses the following in his Abstract:

> After receiving a time division multiplex signal including a plurality of digital data signals transmitted in accordance with different transmission schemes, the received time division multiplex signal is demodulated by a demodulation circuit, and it is judged by a detection circuit whether each of the demodulated digital data signals is received correctly or not. When it is detected that a digital data signal transmitted by anyone of the plurality of different transmission schemes is not received correctly, the relevant digital data signal is replaced by a suitable signal such as a null packet signal which does not affect a correct reception of the remaining digital data signals transmitted by the remaining transmission schemes to form a corrected time division multiplexed signal even if a digital data signal is not received correctly.

It will be shown herein below that the limitations of Claims 11-12 reproduced herein (as argued with respect to independent Claim 1 from which they respectively depend) are not shown in the cited combination, and that Claims 11-12 should be allowed.

C1.   Claims 11-12

Initially, it is respectfully pointed out to the Examiner that Claims 11-12 directly or

indirectly depend from independent Claim 1. Thus, Claims 11-12 include all the limitations of

Claim 1.

It is respectfully asserted that neither Jun nor Hashimoto, either taken singly or in

combination, teach or suggest the following limitations of Claims 11-12 (with the following

applicable to Claims 11-12 by virtue of their respective dependencies from Claim 1):

> a Null-Packet Detector for processing a stream of fixed-length packets
>
> received by said apparatus as digitally encoded signals and having multiple packet
>
> types, each packet including a header portion and a data portion, the header
>
> portion including a sync byte,
>
> wherein said Null-Packet Detector processes the stream by detecting
>
> whether a received packet is a null-packet and for identifying the location of the
>
> sync-byte of a detected null-packet

The following portions of Jun were cited against the above recited limitations of Claims

11-12: Figure 5; col. 5, lines 40-43; and lines 10-12 of the Abstract of Jun.

Initially, it is pointed out that each of Claims 11-12 recite, *inter alia*, processing a stream

of fixed-length packets **received by said apparatus** as digitally encoded signals. Hence, each of

Claims 11-12 may be inherently considered to correspond to a receiver, in order to receive the

stream of fixed-lengths packets for processing in the first place.

In contrast, Figure 5 of Jun is explicitly directed to a <u>transmitter</u> (see, e.g., Jun, col. 4,

lines 39-41, and col. 5, lines 1-3). Accordingly, the first element in the transmitter of Figure 5 of

Jun includes an encoder. Hence, Figure 5 of Jun does not teach or suggest processing a stream of

fixed-length packets received as digitally encoded signals as recited in each of Claims 11-12,

since the transmitter of Figure 5 of Jun is itself performing the encoding prior to transmission and

hence, is not receiving a stream of fixed-length packets as digitally encoded signals as recited in

these claims. Element 115 of FIG. 5 of Jun pointed to by the Examiner as "a receiver of the

encoded signals" on page 2 of the Office Action is simply a buffer and not a receiver. Moreover,

Claims 11-12 are directed to and explicitly recite "an <u>apparatus</u>" (Claims 11-12, preambles), and

Claims 11-12 recite, *inter alia*, "processing a stream of fixed-length packets <u>received by said</u>

<u>apparatus</u> as digitally encoded signals". However, the apparatus of Jun that includes the

transmitter of FIG. 5 of Jun does not receive digitally encoded signals, but instead encodes

signals itself.

Given that Figure 5 of Jun is directed to a transmitter, of course the fact of whether a

packet is a null packet and the location of the sync-byte of a detected null-packet is easily and

readily known by the transmitter of FIG. 5 of Jun since it is the transmitter side itself that is

determining at the onset whether a packet is to be a null packet and where a sync-byte of a null

packet is to be located. However, clearly, such determinations are not so readily made at the

receiver side, and the solving of this problem at the receiver side is what the subject matters of

Claims 11-12 are directed to.

Moreover, given that it is the transmitter side itself that makes the determinations of

whether a packet is a null packet and the location of the sync-byte of a detected null-packet, it

cannot be reasonably asserted at all that any determinations relating to the same on the transmitter side correspond to such determinations of the receiver side. That is, the transmitter side readily knows this information having determined it in the first place, while it is up to the receiver side to "**figure out**" what the transmitter side has done as far as setting a particular packet to a null packet and setting a location of a sync byte in the header portion of that null packet. For example, column 6, lines 19-21 provide an equation for assigning positions of training sync signals within null packets, hence showing that such information is initially determined by, and thus clearly known to, the encoder and the elements comprised therein (such as, for example, the null packet detector).

Hence, Jun does not teach or suggest the above recited limitations of Claims 11-12. Moreover, Hashimoto does not cure the deficiencies of Jun, and is silent with respect to the above recited limitations of Claims 11-12.

Moreover, given that Jun is directed to a transmitter, while the subject matters of Claims 11-12 are essentially directed to receivers, it is respectfully asserted that any combination involving modifying the transmitter of Jun to arrive at the presently claimed subject matters of Claims 11-12 (which are essentially directed to receivers, as argued above) would render Jun unsatisfactory for its intended purpose (i.e., transmitting).

However, as set forth in MPEP 2143.01:

    If proposed modification would render the prior art invention being
    modified unsatisfactory for its intended purpose, then there is no suggestion or

motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221

USPQ 1125 (Fed. Cir. 1984).

Hence, given the preceding, no suggestion or motivation exists to combine Jun with

Hashimoto. Accordingly, Jun is not a proper reference against the pending claims and should be

withdrawn.

Accordingly, Claims 11-12 are patentably distinct and non-obvious over the cited

references for at least the reasons set forth above. Therefore, withdrawal of the rejection and

allowance of Claims 11-12 is earnestly requested.

D. Whether Claims 13-37 are Unpatentable Under 35 U.S.C. §103(a) With Respect To U.S. Patent No. 6,810,084 to Jun et al. in view of U.S. Patent Publication No. 2003/0115345 to Chien et al.

"To establish prima facie obviousness of a claimed invention, all the claim limitations

must be taught or suggested by the prior art" (MPEP §2143.03, citing *In re Royka*, 490 F.2d 981,

180 USPQ 580 (CCPA 1974)). "If an independent claim is nonobvious under 35 U.S.C. 103,

then any claim depending therefrom is nonobvious" (MPEP §2143.03, citing *In re Fine*, 837 F.2d

1071, 5 USPQ2d 1596 (Fed. Cir. 1988)).

The Examiner rejected Claims 13-37 as being unpatentable over U.S. Patent No. 6,810,084

to Jun et al. (hereinafter "Jun") in view of U.S. Patent Publication No. 2003/0115345 to Chien et al.

(hereinafter "Chien"). The Examiner contends that the cited combination shows all the limitations

recited in Claims 13-37.

Jun is directed to "MPEG data frame and transmit and receive system using same" (Jun, Title). In further detail, Jun discloses the following in his Abstract:

Disclosed is an MPEG data frame and a transmitting and receiving system using the MPEG data frame for enhancing receiving performance of receiver which moves or is stationary. The digital TV broadcasting data frame according to the preferred embodiment of the present invention comprises a data frame which includes at least one data field which has 313 data segments. The first data segment of the data field is a data field sync signal which includes a training data sequence used for synchronization at the receiver, and the other 312 data segments each include a 188-byte transport packet and 20-byte error correction data. Therefore, when null packets are input to the 8 VSB transmitter, 2-level training sync signals are used as training data for an equalizer at the receiver so as to increase receiving performance of a receiver that moves or is stationary.

Chien is directed to "method and apparatus for masking destination addresses to reduce traffic over a communication link" (Chien, Title). In further detail, Chien discloses the following in his Abstract:

One method described includes the steps of monitoring, at a wireless transceiver unit, communications involving address assignment between a dynamic host configuration protocol (DHCP) server and one or more computer

devices; storing, at the wireless transceiver unit, at least one computer device identifier corresponding to at least one computer device that was assigned an address by the DHCP server; receiving, at the wireless transceiver unit, traffic from a first computer device of the one or more computer devices; identifying, at the wireless transceiver using the at least one computer device identifier, that the first computer device is one that was assigned an address by the DHCP server; transmitting, from the wireless transceiver unit over a wireless communication link, traffic from the first computer device based on identifying that it was assigned an address by the DHCP server; receiving, at the wireless transceiver unit, traffic from a second computer device of the one or more computer devices; failing to identify, at the wireless transceiver unit using the at least one computer device identifier, that the second computer device is one that was assigned an address by the DHCP server; and inhibiting transmission, from the wireless transceiver unit over the wireless communication link, traffic from the second computer device based on failing to identify that it was assigned an address by the DHCP server.

It will be shown herein below that the limitations of Claims 13-37 reproduced herein (as argued with respect to independent Claims 13, 20, 34, and 35, where Claims 14-19 depend from Claim 13, and Claims 21-33 and 36-37 depend from Claim 20) are not shown in the cited combination, and that Claims 13-37 should be allowed.

D1.   Claims 13-37

Initially, it is respectfully pointed out to the Examiner that Claims 14-19 depend from

independent Claim 13, and Claims 21-33 and 36-37 depend from independent Claim 20. Thus,

Claims 14-19 include all the limitations of Claim 13, and Claims 21-33 and 36-37 include all the

limitations of Claim 20.

It is respectfully asserted that neither Jun nor Chien, either taken singly or in combination,

teach or suggest the following limitations of Claims 13-19 (with the following applicable to Claims

14-19 by virtue of their respective dependencies from Claim 13):

a Syndrome Detector for processing a stream of fixed-length packets

received by said apparatus as digitally encoded signals and having multiple packet

types, each packet including a header portion and a data portion, the header

portion including a checksum-encoded sync byte, the stream processed by

detecting the checksum-encoded sync-byte and ~~for~~ generating a Sync_flag signal

to indicate the location of the checksum-encoded sync-byte;

a Null-Packet Detector adapted to detect whether a received packet is a

null-packet, and adapted to identify the location of the sync-byte of a detected

null-packet; and

an MPEG Sync-Byte Re-insertion circuit for inserting a predetermined

value into the sync-byte location indicated by an MPEG synchronization signal.

Moreover, it is respectfully asserted that neither Jun nor Chien, either taken singly or in combination, teach or suggest the following limitations of Claims 20-33 and 36-37 (with the following applicable to Claims 21-33 and 36-37 by virtue of their respective dependencies from Claim 20):

processing a stream of fixed length packets received by said method as digitally encoded signals, each packet including a checksum-encoded sync-byte, the stream including a plurality of packets that each contain a first fixed bit pattern in the header portion of each packet,

wherein said processing step comprises:

performing a first detection step of decoding the checksum in the stream to detect a checksum-encoded sync byte position candidate in the current one of the fixed length packets;

performing a second detection step to detect the first fixed bit pattern in the header portion of the current one of the fixed length packets;

if the first fixed bit pattern is detected in the stream of fixed length packets, then identifying the sync-byte position of the sync-byte of each of the fixed length packets based upon the detection of the first fixed bit pattern; and

inserting a predetermined sync-byte value into the identified sync-byte position.

Also, it is respectfully asserted that none of the cited references, either taken singly or in combination, teach or suggest the following limitations recited in Claim 34:

processing a stream of fixed length packets received by said method as digitally encoded signals, each packet including a checksum-encoded sync-byte, the stream including a plurality of packets that each contain a first data pattern in a PID portion,

wherein said processing step comprises:

decoding the checksum in a preceding one of the fixed length packets to detect a checksum-encoded sync byte candidate in a current one of the fixed length packets; and

if a checksum-encoded sync byte candidate is detected in the decoding step, then searching for the first data pattern in the PID portion of the current one of the fixed length packets.

Additionally, it is respectfully asserted that none of the cited references, either taken singly or in combination, teach or suggest the following limitation recited in Claim 35:

means for processing a stream of fixed length packets received by said apparatus as digitally encoded signals, each packet including a checksum-encoded sync-byte, the stream including a plurality of packets that each contain a first data pattern in a PID portion,

wherein said means for processing comprises:

means for decoding the checksum in a preceding one of the fixed

length packets to detect a checksum-encoded sync byte candidate in a

current one of the fixed length packets; and

means for searching for the first data pattern in the PID portion of

the current one of the fixed length packets when a checksum-encoded sync

byte candidate is detected in the decoding step.

The following portions of Jun were cited against the above recited limitations of Claims

13-19: Figure 5; col. 5, lines 40-43; and lines 10-12 of the Abstract of Jun; and paragraph [0054]

of Chien. Moreover, the following portions of Jun were cited against the above recited

limitations of Claims 20-37: Figure 5; and 10-11 of the Abstract of Jun; and paragraph [0076] of

Chien.

Initially, it is pointed out that each of Claims 13-37 recite, *inter alia*, processing a stream

of fixed-length packets **received by said apparatus** as digitally encoded signals. Hence, each of

Claims 13-37 may be inherently considered to correspond to a receiver, in order to receive the

stream of fixed-lengths packets for processing in the first place.

In contrast, Figure 5 of Jun is explicitly directed to a <u>transmitter</u> (see, e.g., Jun, col. 4,

lines 39-41, and col. 5, lines 1-3). Accordingly, the first element in the transmitter of Figure 5 of

Jun includes an encoder. Hence, Figure 5 of Jun does not teach or suggest processing a stream of

fixed-length packets received as digitally encoded signals as recited in each of Claims 13-37,

since the transmitter of Figure 5 of Jun is itself performing the encoding prior to transmission and

hence, is not receiving a stream of fixed-length packets as digitally encoded signals as recited in these claims. Element 115 of FIG. 5 of Jun pointed to by the Examiner as "a receiver of the encoded signals" on page 6 of the Office Action is simply a buffer and not a receiver. Moreover, Claims 13-37 are directed to and explicitly recite "a method" or "an apparatus" (Claims 13-37, preambles), and Claims 13-37 recite, *inter alia*, processing a stream of fixed-length packets received by said method/apparatus as digitally encoded signals. However, the apparatus of Jun that includes the transmitter of FIG. 5 of Jun does not receive digitally encoded signals, but instead encodes signals itself.

Given that Figure 5 of Jun is directed to a transmitter, of course the fact of whether a packet is a null packet and the location of the sync-byte of a detected null-packet is easily and readily known by the transmitter of FIG. 5 of Jun since it is the transmitter side itself that is determining at the onset whether a packet is to be a null packet and where a sync-byte of a null packet is to be located. However, clearly, such determinations are not so readily made at the receiver side, and the solving of this problem at the receiver side is what the subject matters of Claims 13-37 are directed to.

Moreover, given that it is the transmitter side itself that makes the determinations of whether a packet is a null packet and the location of the sync-byte of a detected null-packet, it cannot be reasonably asserted at all that any determinations relating to the same on the transmitter side correspond to such determinations of the receiver side. That is, the transmitter side readily knows this information having determined it in the first place, while it is up to the receiver side to "**figure out**" what the transmitter side has done as far as setting a particular packet to a null packet and setting a location of a sync byte in the header portion of that null

31

packet. For example, column 6, lines 19-21 provide an equation for assigning positions of

training sync signals within null packets, hence showing that such information is initially

determined by, and thus clearly known to, the encoder and the elements comprised therein (such

as, for example, the null packet detector).

Hence, Jun does not teach or suggest the above recited limitations of Claims 13-37.

Moreover, Chien does not cure the deficiencies of Jun, and is silent with respect to the above

recited limitations of Claims 13-37.

Moreover, given that Jun is directed to a transmitter, while the subject matters of Claims

13-37 are essentially directed to receivers, it is respectfully asserted that any combination

involving modifying the transmitter of Jun to arrive at the presently claimed subject matters of

Claims 13-37 (which are essentially directed to receivers, as argued above) would render Jun

unsatisfactory for its intended purpose (i.e., transmitting).

However, as set forth in MPEP 2143.01:

> If proposed modification would render the prior art invention being
>
> modified unsatisfactory for its intended purpose, then there is no suggestion or
>
> motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221
>
> USPQ 1125 (Fed. Cir. 1984).

Hence, given the preceding, no suggestion or motivation exists to combine Jun with

Chien. Accordingly, Jun is not a proper reference against the pending claims and should be

withdrawn.

Accordingly, Claims 13-37 are patentably distinct and non-obvious over the cited

references for at least the reasons set forth above. Therefore, withdrawal of the rejection and

allowance of Claims 13-37 is earnestly requested.

E.   **Whether Claims 20-37 are Unpatentable Under 35 U.S.C. §103(a) With Respect To**

        U.S. Patent No. 6,810,084 to Jun et al. in view of U.S. Patent Publication No.

        2003/0115345 to Chien et al. and U.S. Patent No. 6,788,654 to Hashimoto et al.

        "To establish prima facie obviousness of a claimed invention, all the claim limitations

must be taught or suggested by the prior art" (MPEP §2143.03, citing *In re Royka*, 490 F.2d 981,

180 USPQ 580 (CCPA 1974)). "If an independent claim is nonobvious under 35 U.S.C. 103,

then any claim depending therefrom is nonobvious" (MPEP §2143.03, citing *In re Fine*, 837 F.2d

1071, 5 USPQ2d 1596 (Fed. Cir. 1988)).

        The Examiner rejected Claims 20-37 as being unpatentable over U.S. Patent No. 6,810,084

to Jun et al. (hereinafter "Jun") in view of U.S. Patent Publication No. 2003/0115345 to Chien et al.

(hereinafter "Chien") and U.S. Patent No. 6,788,654 to Hashimoto et al. (hereinafter "Hashimoto").

The Examiner contends that the cited combination shows all the limitations recited in Claims 20-

37.

        Jun is directed to "MPEG data frame and transmit and receive system using same" (Jun,

Title). In further detail, Jun discloses the following in his Abstract:

        Disclosed is an MPEG data frame and a transmitting and receiving system

        using the MPEG data frame for enhancing receiving performance of receiver

which moves or is stationary. The digital TV broadcasting data frame according to

the preferred embodiment of the present invention comprises a data frame which

includes at least one data field which has 313 data segments. The first data

segment of the data field is a data field sync signal which includes a training data

sequence used for synchronization at the receiver, and the other 312 data segments

each include a 188-byte transport packet and 20-byte error correction data.

Therefore, when null packets are input to the 8 VSB transmitter, 2-level training

sync signals are used as training data for an equalizer at the receiver so as to

increase receiving performance of a receiver that moves or is stationary.

Chien is directed to "method and apparatus for masking destination addresses to reduce

traffic over a communication link" (Chien, Title). In further detail, Chien discloses the following in

his Abstract:

One method described includes the steps of monitoring, at a wireless

transceiver unit, communications involving address assignment between a

dynamic host configuration protocol (DHCP) server and one or more computer

devices; storing, at the wireless transceiver unit, at least one computer device

identifier corresponding to at least one computer device that was assigned an

address by the DHCP server; receiving, at the wireless transceiver unit, traffic

from a first computer device of the one or more computer devices; identifying, at

the wireless transceiver using the at least one computer device identifier, that the

first computer device is one that was assigned an address by the DHCP server;

transmitting, from the wireless transceiver unit over a wireless communication

link, traffic from the first computer device based on identifying that it was

assigned an address by the DHCP server; receiving, at the wireless transceiver

unit, traffic from a second computer device of the one or more computer devices;

failing to identify, at the wireless transceiver unit using the at least one computer

device identifier, that the second computer device is one that was assigned an

address by the DHCP server; and inhibiting transmission, from the wireless

transceiver unit over the wireless communication link, traffic from the second

computer device based on failing to identify that it was assigned an address by the

DHCP server.

Hashimoto is directed to a "digital data receiver" (Hashimoto, Title). In further detail,

Hashimoto discloses the following in his Abstract:

After receiving a time division multiplex signal including a plurality of

digital data signals transmitted in accordance with different transmission schemes,

the received time division multiplex signal is demodulated by a demodulation

circuit, and it is judged by a detection circuit whether each of the demodulated

digital data signals is received correctly or not. When it is detected that a digital

data signal transmitted by anyone of the plurality of different transmission

schemes is not received correctly, the relevant digital data signal is replaced by a

suitable signal such as a null packet signal which does not affect a correct

reception of the remaining digital data signals transmitted by the remaining

transmission schemes to form a corrected time division multiplexed signal even if

a digital data signal is not received correctly.

It will be shown herein below that the limitations of Claims 20-37 reproduced herein (as

argued with respect to independent Claims 20, 34, and 35, where Claims 21-33 and 36-37 depend

from Claim 20) are not shown in the cited combination, and that Claims 20-37 should be allowed.

E1.   Claims 20-37

Initially, it is respectfully pointed out to the Examiner that Claims 21-33 and 36-37

depend from independent Claim 20. Thus, Claims 21-33 and 36-37 include all the limitations of

Claim 20.

It is respectfully asserted that neither Jun nor Chien nor Hashimoto, either taken singly or in

combination, teach or suggest the following limitations of Claims 20-33 and 36-37 (with the

following applicable to Claims 21-33 and 36-37 by virtue of their respective dependencies from

Claim 20):

processing a stream of fixed length packets received by said method as

digitally encoded signals, each packet including a checksum-encoded sync-byte,

the stream including a plurality of packets that each contain a first fixed bit pattern

in the header portion of each packet,

wherein said processing step comprises:

performing a first detection step of decoding the checksum in the
stream to detect a checksum-encoded sync byte position candidate in the
current one of the fixed length packets;

performing a second detection step to detect the first fixed bit
pattern in the header portion of the current one of the fixed length packets;

if the first fixed bit pattern is detected in the stream of fixed length
packets, then identifying the sync-byte position of the sync-byte of each of
the fixed length packets based upon the detection of the first fixed bit
pattern; and

inserting a predetermined sync-byte value into the identified sync-
byte position.

Also, it is respectfully asserted that none of the cited references, either taken singly or in
combination, teach or suggest the following limitations recited in Claim 34:

processing a stream of fixed length packets received by said method as
digitally encoded signals, each packet including a checksum-encoded sync-byte,
the stream including a plurality of packets that each contain a first data pattern in a
PID portion,

wherein said processing step comprises:

decoding the checksum in a preceding one of the fixed length

packets to detect a checksum-encoded sync byte candidate in a current one

of the fixed length packets; and

if a checksum-encoded sync byte candidate is detected in the

decoding step, then searching for the first data pattern in the PID portion

of the current one of the fixed length packets.

Additionally, it is respectfully asserted that none of the cited references, either taken

singly or in combination, teach or suggest the following limitation recited in Claim 35:

means for processing a stream of fixed length packets received by said

apparatus as digitally encoded signals, each packet including a checksum-encoded

sync-byte, the stream including a plurality of packets that each contain a first data

pattern in a PID portion,

wherein said means for processing comprises:

means for decoding the checksum in a preceding one of the fixed

length packets to detect a checksum-encoded sync byte candidate in a

current one of the fixed length packets; and

means for searching for the first data pattern in the PID portion of

the current one of the fixed length packets when a checksum-encoded sync

byte candidate is detected in the decoding step.

The following portions of Jun were cited against the above recited limitations of Claims

20-37: Figure 5; and 10-11 of the Abstract of Jun; and paragraph [0076] of Chien.

Initially, it is pointed out that each of Claims 20-37 recite, *inter alia*, processing a stream

of fixed-length packets **received by said apparatus** as digitally encoded signals. Hence, each of

Claims 20-37 may be inherently considered to correspond to a receiver, in order to receive the

stream of fixed-lengths packets for processing in the first place.

In contrast, Figure 5 of Jun is explicitly directed to a transmitter (see, e.g., Jun, col. 4,

lines 39-41, and col. 5, lines 1-3). Accordingly, the first element in the transmitter of Figure 5 of

Jun includes an encoder. Hence, Figure 5 of Jun does not teach or suggest processing a stream of

fixed-length packets received as digitally encoded signals as recited in each of Claims 20-37,

since the transmitter of Figure 5 of Jun is itself performing the encoding prior to transmission and

hence, is not receiving a stream of fixed-length packets as digitally encoded signals as recited in

these claims. Element 115 of FIG. 5 of Jun pointed to by the Examiner as "a receiver of the

encoded signals" on page 9 of the Office Action is simply a buffer and not a receiver. Moreover,

Claims 20-37 are directed to and explicitly recite "a method" or "an apparatus" (Claims 20-37,

preambles), and Claims 20-37 recite, *inter alia*, processing a stream of fixed-length packets

received by said method/apparatus as digitally encoded signals. However, the apparatus of Jun

that includes the transmitter of FIG. 5 of Jun does not receive digitally encoded signals, but

instead encodes signals itself.

Given that Figure 5 of Jun is directed to a transmitter, of course the fact of whether a

packet is a null packet and the location of the sync-byte of a detected null-packet is easily and

readily known by the transmitter of FIG. 5 of Jun since it is the transmitter side itself that is

determining at the onset whether a packet is to be a null packet and where a sync-byte of a null

packet is to be located. However, clearly, such determinations are not so readily made at the

receiver side, and the solving of this problem at the receiver side is what the subject matters of

Claims 20-37 are directed to.

Moreover, given that it is the transmitter side itself that makes the determinations of

whether a packet is a null packet and the location of the sync-byte of a detected null-packet, it

cannot be reasonably asserted at all that any determinations relating to the same on the

transmitter side correspond to such determinations of the receiver side. That is, the transmitter

side readily knows this information having determined it in the first place, while it is up to the

receiver side to "**figure out**" what the transmitter side has done as far as setting a particular

packet to a null packet and setting a location of a sync byte in the header portion of that null

packet. For example, column 6, lines 19-21 provide an equation for assigning positions of

training sync signals within null packets, hence showing that such information is initially

determined by, and thus clearly known to, the encoder and the elements comprised therein (such

as, for example, the null packet detector).

Hence, Jun does not teach or suggest the above recited limitations of Claims 20-37.

Moreover, Hashimoto does not cure the deficiencies of Jun, and is silent with respect to the

above recited limitations of Claims 20-37.

Moreover, given that Jun is directed to a transmitter, while the subject matters of Claims

20-37 are essentially directed to receivers, it is respectfully asserted that any combination

involving modifying the transmitter of Jun to arrive at the presently claimed subject matters of

Claims 20-37 (which are essentially directed to receivers, as argued above) would render Jun

unsatisfactory for its intended purpose (i.e., transmitting).

However, as set forth in MPEP 2143.01:

> If proposed modification would render the prior art invention being
>
> modified unsatisfactory for its intended purpose, then there is no suggestion or
>
> motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221
>
> USPQ 1125 (Fed. Cir. 1984).

Hence, given the preceding, no suggestion or motivation exists to combine Jun with

Chien or Hashimoto. Accordingly, Jun is not a proper reference against the pending claims and

should be withdrawn.

Accordingly, Claims 20-37 are patentably distinct and non-obvious over the cited

references for at least the reasons set forth above. Therefore, withdrawal of the rejection and

allowance of Claims 20-37 is earnestly requested.

E.   Conclusion

At least the above-identified limitations of the pending claims are not disclosed or

suggested by the teachings of the cited references. Accordingly, it is respectfully requested that

the Board reverse the rejections of Claim 1-3 and 11-37 under 35 U.S.C. §102(e) and §103(a).

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Respectfully submitted,

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February 3, 2009

8.   CLAIMS APPENDIX

1.   (previously presented) An apparatus, comprising:

a Null-Packet Detector for processing a stream of fixed-length packets received by said apparatus as digitally encoded signals and having multiple packet types, each packet including a header portion and a data portion, the header portion including a sync byte,

wherein said Null-Packet Detector processes the stream by detecting whether a received packet is a null-packet and for identifying the location of the sync-byte of a detected null-packet.

2.   (previously presented) The apparatus of claim 1, wherein the Null-Packet Detector further generates a Null_flag signal to indicate whether a received packet is a null-packet and generates a Null_sync signal to indicate the location of the sync-byte of a detected null-packet.

3.   (previously presented) The apparatus of claim 2, further comprising a circuit adapted to insert a predetermined sync-byte value into the sync-byte position indicated by the Null_sync signal.

4.   (previously presented) The apparatus of claim 2, further comprising a filter adapted to filter the Null_flag signal and adapted to generate a Null_lock signal a first value of which indicates that the stream contains a plurality of null packets.

5.   (previously presented) The apparatus of claim 4 wherein the filter implements hysteresis thresholding.

6.   (previously presented) The apparatus of claim 4 wherein the filter is implemented by a finite state machine.

7.   (previously presented) The apparatus of claim 4, wherein the first value of Null_lock signal output by the filter indicates that the stream contains a first threshold number of null-packets (Lock_In_thresh) within a first number of consecutive packets.

8.   (original) The apparatus of claim 7, wherein at least one of the first threshold number and the first number of consecutive packets is programmable.

9.   (previously presented) The apparatus of claim 7, wherein a second value of the Null_lock signal output by the filter indicates that the stream contains a second threshold number (Lock_Out_thresh) of packets that are not null packets, within a second number of consecutive packets.

10.   (previously presented) The apparatus of claim 9, wherein at least one of the first threshold number, and the second threshold number is programmable.

11.   (previously presented) The apparatus of claim 2, wherein the Null-Packet Detector determines whether a received packet is a null-packet by comparing contents of the header portion of the received packet with a first predetermined value.

12.   (previously presented) The apparatus of claim 11, wherein the Null-Packet Detector determines whether a received packet is a null-packet by further comparing contents of the data portion of the received packet with a second predetermined value.

13.   (previously presented) An apparatus, comprising:

a Syndrome Detector for processing a stream of fixed-length packets received by said apparatus as digitally encoded signals and having multiple packet types, each packet including a header portion and a data portion, the header portion including a checksum-encoded sync byte, the stream processed by detecting the checksum-encoded sync-byte and generating a Sync_flag signal to indicate the location of the checksum-encoded sync-byte;

a Null-Packet Detector adapted to detect whether a received packet is a null-packet, and adapted to identify the location of the sync-byte of a detected null-packet; and

an MPEG Sync-Byte Re-insertion circuit for inserting a predetermined value into the sync-byte location indicated by an MPEG synchronization signal.

14.   (previously presented) The apparatus of claim 13, wherein the Null-Packet Detector is further adapted to output a Null_sync signal to indicate the location of the sync-byte of a detected null-packet.

15.   (original) The apparatus of claim 14, further comprising:

a multiplexor, wherein the Sync_flag output of the Syndrome Detector and the Null_sync output of the Null-Packet Detector are multiplexed and are alternatively output by the multiplexor, to be used by the MPEG Sync-Byte Re-insertion circuit, according to whether null packets have been detected.

16.   (previously presented) The apparatus of claim 15, further comprising a decisional logic circuit operatively connected to the multiplexor and adapted to control the multiplexor so that when the Null-Packet Detector detects null packets, the Null_sync output of the Null Packet Detector is output by the multiplexor to be used as the MPEG synchronization signal by the MPEG Sync-Byte Re-insertion circuit.

17.   (original) The apparatus of claim 14 adapted so that when null packets are detected, the Null_sync output of the Null Packet detector is used as the MPEG synchronization signal used by the MPEG Sync Re-insertion circuit.

18.   (original) The apparatus of claim 17, wherein when null packets are not detected, the Null_sync output of the Null Packet detector is not used as the MPEG synchronization signal used by the MPEG Sync Re-insertion circuit.

19. (original) The apparatus of claim 18, wherein when null packets are not detected, the Sync_flag output by the Syndrome Detector is used as the MPEG synchronization signal used by the MPEG Sync Re-insertion circuit.

20. (previously presented) A method, comprising:

processing a stream of fixed length packets received by said method as digitally encoded signals, each packet including a checksum-encoded sync-byte, the stream including a plurality of packets that each contain a first fixed bit pattern in the header portion of each packet,

wherein said processing step comprises:

performing a first detection step of decoding the checksum in the stream to detect a checksum-encoded sync byte position candidate in the current one of the fixed length packets;

performing a second detection step to detect the first fixed bit pattern in the header portion of the current one of the fixed length packets;

if the first fixed bit pattern is detected in the stream of fixed length packets, then identifying the sync-byte position of the sync-byte of each of the fixed length packets based upon the detection of the first fixed bit pattern; and

inserting a predetermined sync-byte value into the identified sync-byte position.

21. (original) The method of claim 20, wherein the second detection step is performed only if a checksum-encoded sync byte position candidate is detected in the first detection step.

22. (original) The method of claim 20, wherein while the first fixed bit pattern is not detected in the stream of fixed length packets, then identifying the sync-byte position of the sync-byte of each of the fixed length packets in the stream based upon the result of the first detection step;

and inserting the predetermined sync-byte value into the sync-byte position candidate based upon the result of the first detection step.

23.   (original) The method of claim 20, wherein if a checksum-encoded sync byte candidate is detected in the first detection step, but the first fixed bit pattern is not detected by the second detection step, then inserting a predetermined sync-byte value into the sync-byte position candidate based upon the result of the first detection step.

24.   (original) The method of claim 20, wherein the second detection step is performed even if a checksum-encoded sync byte candidate is not detected in the first detection step.

25.   (original) The method of claim 20, wherein the first fixed bit pattern is a predetermined bit pattern in the header portion of each packet within the plurality of packets.

26.   (original) The method of claim 25, wherein said header portions comprise transport headers of an MPEG-2 Transport Stream.

27.   (original) The method of claim 20, wherein the first fixed bit pattern is a predetermined pattern that includes at least one of the following MPEG-2 transport stream link header field values: payload_unit_start_indicator = '0', PID=0x1FFF, transport scrambling control = '00', and adaptation field = '01' .

28.   (original) The method of claim 20, wherein each of the plurality of packets is an MPEG-2 null-packet.

29.   (original) The method of claim 20, wherein each packet in the plurality of packets that each contain a first fixed bit pattern in a header portion of each packet further contains a second fixed bit pattern within the data portion of each packet; and further comprising:

performing a third detection step to detect the second fixed bit pattern in the plurality of packets within the stream of fixed length packets, and if the second fixed bit pattern is detected in the stream of fixed length packets, then inserting the predetermined sync-byte value into the sync-byte position based upon the result of the third detection step.

30.   (original) The method of claim 28, wherein the third detection step is performed only if a checksum-encoded sync byte position candidate is detected in the first detection step.

31.   (original) The method of claim 28, wherein if neither of the first and second detection steps has identified a sync byte position, then no predetermined sync-byte value is inserted in the stream of fixed length packets.

32.   (original) The method of claim 28, wherein the third detection step is performed only if the first fixed bit pattern is detected in the stream of fixed length packets in the second detection step.

33.   (original) The method of claim 28, wherein if the second fixed bit pattern is not detected in the stream of fixed length packets, then identifying the sync-byte position of the sync-byte of each of the fixed length packets based upon the result of the first detection step.

34.   (previously presented) A method, comprising:

processing a stream of fixed length packets received by said method as digitally encoded signals, each packet including a checksum-encoded sync-byte, the stream including a plurality of packets that each contain a first data pattern in a PID portion,

wherein said processing step comprises:

decoding the checksum in a preceding one of the fixed length packets to detect a checksum-encoded sync byte candidate in a current one of the fixed length packets; and

if a checksum-encoded sync byte candidate is detected in the decoding step, then searching for the first data pattern in the PID portion of the current one of the fixed length packets.

35.   (previously presented) An apparatus, comprising:

means for processing a stream of fixed length packets received by said apparatus as

digitally encoded signals, each packet including a checksum-encoded sync-byte, the stream including a plurality of packets that each contain a first data pattern in a PID portion,

        wherein said means for processing comprises:

                means for decoding the checksum in a preceding one of the fixed length packets to detect a checksum-encoded sync byte candidate in a current one of the fixed length packets; and

                means for searching for the first data pattern in the PID portion of the current one of the fixed length packets when a checksum-encoded sync byte candidate is detected in the decoding step.

        36.   (original) A computer program product for a set-top-box that comprises a set of instructions, which, when loaded into the set-top-box, causes the set-top-box to carry out the method, for processing a stream of fixed length packets, claimed in claim 20.

        37.   (original) A computer program product for a television set that comprises a set of instructions, which, when loaded into the television set, causes the television set to carry out the method, for processing a stream of fixed length packets, claimed in claim 20.

9.   RELATED EVIDENCE APPENDIX

None.

10. RELATED PROCEEDINGS APPENDIX

None